Commonwealth of Virginia
Department of General Services
Division of Consolidated Laboratory Services
Richmond, Virginia

Vaccine Preventable Diseases (Measles, Mumps, Varicella Zoster Virus) Collection Instructions

DCLS can provide the collection materials (upon request) and testing services in support of state and federal Measles, Mumps and Varicella Zoster Virus (VZV) testing. **Testing requests MUST be approved by VDH's Division of Immunizations before testing can be performed at DCLS.**

Each kit provides enough material to sample acceptable patient specimens for Measles, Mumps and VZV testing. Collection Kits are ordered through DCLS' Sample Kit Office at (804) 648-4480 x104.

I. KIT CONTENTS:

Measles:

1 – Remel Sterile Viral Transport Media (VTM) vials*
2 – Sterile flocked (plastic) swab applicator**
1 – 4oz. Sterile urine cup
1 – Tiger top serum separator tube

Mumps:

1 – Remel Sterile Viral Transport Media (VTM) vial*
1 – Sterile flocked (plastic) swab applicator**
1 – Tiger top serum separator tube

VZV:

1 – Remel Sterile Viral Transport Media (VTM) vial*
2 – Sterile flocked (plastic) swab applicator**
1 – 15mL conical tube

***Note: Store at 2-30°C. Do not use if turbid or expired**.

****Note: Do not use cotton or Calcium alginate swabs or swabs with wooden shafts. ****

Shipping Materials:

3– Ice packs. **Store frozen until used**.
1 – Saf-T-Pak Packing Instructions (STP-308SYS)
1 - Insulated Chest with Pre-Labeled Fiberboard Box (STP-3081)
3 – Bubble Pouch
3 – Leak-proof Polybag with Absorbent Pad (STP-711)
3 – Tyvek Envelope (STP-710)
1 – Prepaid Return Service (RS) UPS mailing label

II. ACCEPTABLE SPECIMEN TYPES:

Test Method	Virus	Specimen types	Storage/Transport
Real-time PCR analysis	Measles	NP swab in VTM (primary specimen) Throat swab in VTM (secondary specimen) Urine (secondary specimen)	**Store refrigerated and transport all specimens at refrigerated temperatures using cold packs.**
	Mumps	Buccal swab in VTM	
	VZV	Dry swab of lesion Vesicle "roof" or crust	
Virus Isolation*	Measles	NP swab in VTM (primary specimen) Throat swab in VTM (secondary specimen)	
	Mumps	Buccal swab in VTM	
	VZV	Swab of lesion in VTM (wet)	
Serology (IgM and IgG)**	Measles	Serum separator blood tube	
	Mumps	Red-top blood tube (not provided)	

***Specimens for viral isolation should be received at DCLS within 72 hours of collection. The same specimens for viral isolation also will be analyzed using real-time PCR.**

****Serology specimens MUST be received at DCLS within 48 hours of collection or stored frozen until shipment can occur. Ship frozen specimens on dry ice.**

III. SPECIMEN COLLECTION INSTRUCTIONS:

NP Swab Specimen Collection

Measles: *Collect the NP and throat swab samples as close to rash onset as possible, preferably within the first 3 days of illness but no later than 10 days after rash onset*.

1. Instruct the patient to sit with head tilted back slightly. Gently push the tip of the patient's nose back with your thumb.
2. Insert the dry NP swab into the nose and back to the nasopharynx. The patient's eyes will momentarily tear. Slowly rotate the swab as it is being withdrawn.
3. Repeat the process using the same swab in the second nostril.
4. Insert a single swab into one VTM container, bending the wire if necessary to fit completely inside the vial. Properly thread the cap onto the vial to prevent leakage.
5. Label the VTM collection tube with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Throat Swab Specimen Collection

Measles: *Collect the throat swab along with the NP swab as close to rash onset as possible, preferably within the first 3 days of illness but no later than 10 days after rash onset*.

1. Insert a dry sterile flocked swab into the mouth and wipe along the back of the throat. It is important to take the sample from the back of the throat and NOT the sides of the mouth or cheek cavity.
2. Place the throat swab into the **SAME** VTM container as the NP swab. KEEP TIP AND MEDIUM AS STERILE AS POSSIBLE.
3. Break off (or cut off) the shaft of the swab at the top of the bottle so that the tip remains in the VTM and the lid can be screwed tightly shut.
4. Properly thread the cap onto the vial to prevent leakage.
5. Label the VTM collection tube with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Buccal Swab Specimen Collection

Mumps: *Collect the buccal swab as soon as mumps is suspected. Testing buccal swabs within 24 hours of collection will enhance real-time PCR and viral isolation sensitivity.*

1. Massage the parotid (salivary) glands for 30 seconds (the buccal cavity is the space near the upper rear molars between the cheek and teeth).
2. Swab the area between the cheek and gum by sweeping the swab near the upper molar to the lower molar area.
3. Insert the swab into the VTM container, breaking off the swab is necessary to fit completely inside the vial.
4. Properly thread the cap onto the vial to prevent leakage.
5. Label the VTM collection tube with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Urine Specimen Collection

Measles: *Collect first voided morning urine which typically contains the highest concentration of infected cells. Virus can be present in the urine even a few days before rash appears and begins to diminish a few days following rash onset.*

1. **First voided morning urine is preferred**. Collect 10-50 mL of urine in an empty sterile container. DO NOT add VTM.
2. Maintain the urine specimen at refrigerator temperature prior to transport. Transport at refrigerated temperatures using the provided cold-packs.
3. Properly thread the cap onto the vial to prevent leakage.
4. Label the urine cup with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Dry Lesion Swab Collection

1. Use a sterile needle (not provided) to unroof the top of the vesicle.
2. Use a dry sterile flocked swab to vigorously swab the base of the legion and collect vesicle fluid, applying enough pressure to collect epithelial cells without causing bleeding (epithelial cells at the base of the legion usually contain significant amounts of virus).
3. Place swab in a sterile empty 15mL conical tube.
4. Break off the shaft of the swab at the top of the tube if needed, so that the lid can be screwed tightly shut.

5. Properly thread the cap onto the vial to prevent leakage.
6. Label the VTM collection tube with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Wet Lesion Swab Collection

1. Use a sterile needle (not provided) to unroof the top of the vesicle.
2. Use a dry sterile flocked swab to vigorously swab the base of the legion and collect vesicle fluid applying enough pressure to collect epithelial cells without causing bleeding (epithelial cells at the base of the legion usually contain significant amounts of virus).
3. Place swab in the VTM container.
4. Break off the shaft of the swab at the top of the tube if needed, so that the lid can be screwed tightly shut.
5. Properly thread the cap onto the vial to prevent leakage.
6. Label the VTM collection tube with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

Vesicle "Roof" or Crust Collection Crusts can be lifted off the skin and transferred directly into a sterile, break-resistant, screw-top tube. DO NOT ADD VTM.

Serum Specimen Collection

Measles: *Collect acute-phase serum sample as soon as measles is suspected. A second serum specimen may be collected 4-10 days after rash onset if the specimen collected within 3 (≤3) days of rash onset is IgM negative, and patient has negative or no real-time PCR results.*

Mumps: *Collect acute-phase serum sample as soon as mumps is suspected. A second serum specimen may be collected 5-10 days after parotitis onset if the specimen collected within 3 (≤3) days of parotitis onset is IgM negative, and patient has negative or no real-time PCR results.*

1. Collect 7-10 mL of blood in a red top (not provided) or serum separator tube (SST).
2. Paired sera can be of value for patients with no history of vaccination or with seronegative acute specimens. Collect acute serum as soon after onset as possible and collect the convalescent serum 2-3 weeks later to determine if a significant change in IgG antibody titer has occurred.
3. Label the blood tubes with the patient's name and date of collection. Complete the request form and refrigerate the sample until packaging for transport.

IV. SPECIMEN TRANSPORT

Package sample(s) for transport to the laboratory in compliance with shipping regulations detailed in IATA 1.5 AND 49 CFR Section 1720700 [U.S. Department of Transportation] using the provided shipper.

1. Refer to the enclosed SAF-T- PAK Packing Instructions (STP-308SYS).
2. Be sure to insert the Tyvek envelope into the insulated chest with chilled thermal packs.
3. **Ensure that each sample is properly labeled and that the Clinical Microbiology/Virology Request Form is complete (front and back) for each sample collected. This form is placed in the plastic bag and is placed on the lid on the outside of the insulated chest.**
4. Do not write anything on the box where the words "PROPER SHIPPING NAME" and "UN IDENTIFICATION NUMBER" appear. The UN3373 label will suffice.
5. A RS UPS label will be provided with your facility name and phone number.
6. Peel off the backing of the RS UPS label and affix to the top outside flap of the cardboard shipping box. This label should not cover any hazardous shipping labels and should not extend beyond any edge of the package as indicated on the cardboard box.

7. Close the cardboard box and seal with packing tape after affixing the UPS label.
8. If you do not have a daily UPS scheduled pick up, please call UPS at # 1-800-742-5877/1-800-PICK UPS (using the supplied UPS RS tracking number and your assigned UPS #) or contact your local health department regarding package drop off for delivery to the lab.
9. **Ship sample(s) without delay. Do not ship on Friday or before a holiday.**

Sample Rejection: Samples may be rejected for the following reasons

1. Unfrozen serum samples received in the laboratory more than 48 hours post collection
2. Swabs in VTM received in the laboratory more than 72 hours post collection may not be analyzed for viral isolation. **(NOTE: Please do not ship on Friday or before a holiday)**
3. Sample temperature requirements not maintained during shipment
4. Improperly or unlabeled samples (samples and forms must match exactly)
5. Insufficient volume
6. Sample collected in expired VTM
7. Samples collected in transport media other than VTM or UTM
8. Excessive bacterial contamination

Result Reporting: PCR results will be telephoned to all submitters and to the VDH Office of Epidemiology. Paper reports will be mailed to all submitters.

Please forward information or questions about sample transport to the laboratory at (804)-648-4480 x140.